



PROJECT NUMBER: 338884.FL	BORING NUMBER: GSC-04
SHEET 1 OF 9	
SOIL BORING LOG	

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : 1723824.3 N, 457384.0 E (NAD83)
 ELEVATION : 40.0 ft (NAVD88) DRILLING CONTRACTOR : Universal Engineering Sciences, Gainesville, FL; Driller: M. Boatright; Cathead Operator: G. Davis
 DRILLING METHOD AND EQUIPMENT : CME 550 S/N 186073, mud rotary, cathead, NW rods, 3-7/8" tri-cone bit ORIENTATION : Vertical
 WATER LEVELS : 5.2 ft bgs on 5/31/2007 START : 5/31/2007 END : 6/1/2007 LOGGER : R. McComb

DEPTH BELOW SURFACE AND ELEVATION (ft)	SAMPLE INTERVAL (ft)		#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
		RECOVERY (ft)					
40.0	0.0	0.6	SS-1	2-4-5 (9)	Topsoil (OL) 0.0-0.6' - dark gray to grayish black, (N2 to N3), trace fine silica sand, abundant organic material		
	1.5						
5	5.0						
35.0		0.9	SS-2	6-7-6 (13)	Clayey Sand (SC) 5.0-5.9' - moderate yellowish brown and dark yellowish brown, (10YR 5/1 and 10YR 4/2), moist, medium dense, very fine to fine grained, silica sand, 25-30% low to medium plastic fines, trace root fragments		
	6.5						
10	10.0						
30.0		1.1	SS-3	7-9-12 (21)	Silty Sand (SM) 10.0-11.05' - pale yellowish brown, (10YR 6/2), wet, medium dense, 20% nonplastic to low plastic fines, fine silica sand		
	11.5						
15	15.0						
25.0		1.4	SS-4	6-8-10 (18)	Silty Sand (SM) 15.0-16.4' - Same as 10.0-11.05'		
	16.5						
20							



PROJECT NUMBER: 338884.FL	BORING NUMBER: GSC-04
SHEET 2 OF 9	
SOIL BORING LOG	

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : 1723824.3 N, 457384.0 E (NAD83)
 ELEVATION : 40.0 ft (NAVD88) DRILLING CONTRACTOR : Universal Engineering Sciences, Gainesville, FL; Driller: M. Boatright; Cathead Operator: G. Davis
 DRILLING METHOD AND EQUIPMENT : CME 550 S/N 186073, mud rotary, cathead, NW rods, 3-7/8" tri-cone bit ORIENTATION : Vertical
 WATER LEVELS : 5.2 ft bgs on 5/31/2007 START : 5/31/2007 END : 6/1/2007 LOGGER : R. McComb

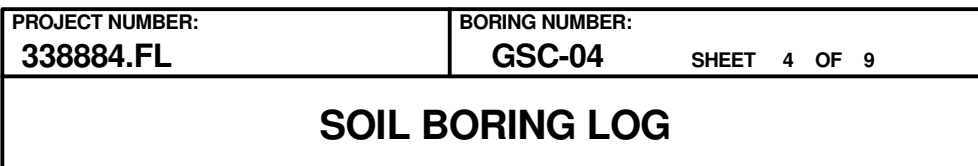
WATER LEVELS : 3.210 DGS ON 9/3/7/2007 START : 9/3/7/2007 END : 9/7/2007 LOGGERS : T. MCGRUB							
DEPTH BELOW SURFACE AND ELEVATION (ft)	SAMPLE INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS
	RECOVERY (ft)	#TYPE		6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
20.0	20.0	1.2	SS-5	11-12-12 (24)	Silt Sand (SM) 20.0-21.2' - Same as 15.0-16.4'		
	21.5						
25	25.0						
15.0		0.9	SS-6	5-4-5 (9)	Silty Sand (SM) 25.0-25.9' - Same as 20.0-21.2'		
	26.5						
30	30.0						
10.0		1.5	SS-7	2-3-2 (5)	Silty Sand (SM) 30.0-31.5' - Same as 25.0-25.9'		
	31.5						
35	35.0						
5.0		1.4	SS-8	5-8-7 (15)	Sandy Lean Clay Or Sandy Organic Soil (CL-OL) 35.0-35.7' - dark gray to grayish black, (N3 to N2), moist, stiff, low to medium plasticity, slow dilatancy, 30% very fine silica sand		35.0-35.7' appears organic rich
	36.5				Silty Sand (SM) 35.7-36.4' - pale yellowish brown mottled with dark yellowish brown, (10YR 6/2 mottled with 10YR 4/2), wet, medium dense, very fine to fine silica sand, 30-35% low plastic fines		
40							



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SHEET 3 OF 9	
SOIL BORING LOG	

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : 1723824.3 N, 457384.0 E (NAD83)
 ELEVATION : 40.0 ft (NAVD88) DRILLING CONTRACTOR : Universal Engineering Sciences, Gainesville, FL; Driller: M. Boatright; Cathead Operator: G. Davis
 DRILLING METHOD AND EQUIPMENT : CME 550 S/N 186073, mud rotary, cathead, NW rods, 3-7/8" tri-cone bit ORIENTATION : Vertical
 WATER LEVELS : 5.2 ft bgs on 5/31/2007 START : 5/31/2007 END : 6/1/2007 LOGGER : R. McComb

WATER LEVELS : 3.2 TUBS ON 3/3/2007		START : 3/3/2007		END : 3/7/2007		LOGGERS : T. MCGRUB	
DEPTH BELOW SURFACE AND ELEVATION (ft)	SAMPLE INTERVAL (ft)		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		SYMBOLIC LOG	COMMENTS
	RECOVERY (ft)	#TYPE		6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
0.0	40.0	0.8	SS-9	3-3-4 (7)	Sandy Organic Soil And Sandy Lean Clay (OL-CL) 40.0-40.8' - Same as 35.0-35.7' except grayish black, (N2), moist, medium stiff, low to medium plasticity, slow dilatancy, 30% very fine to fine silica sand		
	41.5						
45	45.0						
-5.0		1.5	SS-10	3-2-4 (6)	Silt And Sandy Organic Soil (ML-OL) 45.0-45.6' - moderate yellowish brown, (10YR 5/4), moist, medium stiff, nonplastic to low plasticity, rapid dilatancy, contact between lithologies abrupt and inclined; 70% ML, 30% OL, trace very fine silica sand, OL is grayish black (N2), moist, medium stiff, low to medium plastic, slow to rapid dilatancy, 20% very fine to fine silica sand Clayey Sand (SC) 45.6-46.5' - grayish black, (N2), wet, loose, very fine to fine grained silica sand, 25-30% low to medium plastic fines		45.6-46.5' appears organic rich
	46.5						
50	50.0						
-10.0		1.2	SS-11	30-40-45 (85)	Silt (ML) 50.0-51.2' - moderate yellowish brown, (10Y 5/4), wet, hard, low plasticity, rapid dilatancy, mild HCl reaction, trace fine grained sand, carbonate material		
	51.5						
55	55.0						
-15.0		1.1	SS-12	8-5-12 (17)	Silty Sand With Limestone (SM) 55.0-56.1' - moderate yellowish brown, (10YR 5/4), wet, medium dense, fine to coarse grained, mild HCl reaction, 20-25% low plastic fines, 25% fine gravel-sized limestone fragments, carbonate materials		Driller's Remark: hard drilling at 53.5'
	56.5						
60							





PROJECT NUMBER:

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SHEET 5 OF 9

ROCK CORE LOG

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : 1723824.3 N, 457384.0 E (NAD83)

ELEVATION : 40.0 ft (NAVD88)

DRILLING CONTRACTOR : Universal Engineering Sciences, Gainesville, FL; Driller: M. Boatright; Cathead Operator: G. Davis

CORING METHOD AND EQUIPMENT : CME 550 S/N 186073, mud rotary, NQ tools, NW casing

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs on 5/31/2007

START : 5/31/2007

END : 6/1/2007

LOGGER : R. McComb

DEPTH BELOW SURFACE AND ELEVATION (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		RQD (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
-40.0	80.0	8	3	80.15' - Bedding plane, horizontal, smooth, open		Limestone Fragments 80.0-81.35' - light olive gray, (5Y 5/2), moderate HCl reaction, very weak to weak (R1 to R2), fossiliferous (voids, casts, molds), voids up to 1/16", some cavities generally <6/16"x6/16" Limestone 81.35-82.3' - pale greenish yellow, (10Y 8/2), fine to very fine grained, strong HCl reaction, weak to medium strong (R2 to R3), <2% voids and cavities, variegated color with contact at 81.9' No Recovery 82.3-85.0' Limestone 85.0-90.0' - yellowish gray with pale greenish yellow mottling, (5Y 7/2 with 10Y 8/2), fine grained, mild HCl reaction, very weak to weak (R1 to R2), lithoclasts like fractures at 86.0-86.4' and 87.0-87.4' (light colored limestone with few voids); fossiliferous (casts and molds), voids and cavities up to 3/8"-3/4"x3/8" over 40-50% of surface 90.0-90.9' - mottled yellowish gray to light olive brown, (5Y 7/2 to 5Y 5/6), fine to very fine grained, mild to moderate HCl reaction, very weak (R1), fossiliferous (molds/casts) with very fine grained yellowish gray possible intraclasts in the structure, voids and cavities up to 3/16"-3/8" over 50-60% of surface 90.9-92.0' - very light gray mottled medium gray with dusky yellow to moderate olive brown, (N8 mottled with N6 with 5Y 6/4 to 5Y 4/4), very fine grained, strong HCl reaction, weak (R2), <2% cavities, voids up to 3/16" over 15-20% of rock surface 92.0-93.4' - Same as 90.9-92.0' except pale yellowish brown to light olive brown, (10YR 6/2 to 5Y 5/6), mottled, very fine grained, mild to moderate HCl reaction, cavities and voids more common than above with some cavity infilling (strong HCl reaction), cavities and voids up to 20-25% 93.4-95.0' - Same as 90.9-92.0' except voids up to 20-25%	Switching over to NQ coring at 80.0'
			4	80.35' - Fracture, 30 deg, rough, stepped, black organic film over 15-20%, tight			
			10	80.6' - Fracture, 50-60 deg, rough, undulating, tight			
			NR	81.03' - Fracture, 0-80 deg, rough, stepped, tight			
		44	1	81.35' - Bedding plane, horizontal, smooth, stepped, open			
			1	81.67, 81.8' - Bedding plane, horizontal, smooth, open			
			2	82.2' - Bedding plane, horizontal, smooth, open			
			3	85.9' - Fracture or mechanical break, horizontal, rough, undulating, tight			
85	85.0	90	1	86.6-87.75' - Fracture zone, vertical, rough, undulating, tight			
-45.0			0	88.4-88.8' - Fracture zone, 0-<5 deg, rough, undulating, tight to open			
			0	89.15-89.3' - Fracture zone, 0-90 deg, Undulating to stepped, tight to open			
			1	89.6' - Fracture, 0-90 deg, rough, Undulating to stepped, open			
90	90.0	74	0	90.7' - Fracture, <5 deg, rough, undulating, tight			
-50.0			1	93.4' - Bedding plane, horizontal, rough, undulating, tight			
			2	94.6' - Fracture, horizontal, rough, undulating, tight			
			0	94.9' - Fracture, horizontal, rough, undulating, tight			
95	95.0	NR	1	95.2' - Bedding plane, horizontal, smooth, undulating, open			
-55.0			0	97.5' - Bedding plane, <5 deg, rough, undulating, open			
			2	98.5' - Bedding plane, horizontal, smooth, undulating, open, organic material			
			10	98.8' - Fracture, 20 deg, rough, undulating, tight			
100	100.0		NR				



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SHEET 6 OF 9

ROCK CORE LOG

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ELEVATION : 40.0 ft (NAVD88)

DRILLING CONTRACTOR : Universal Engineering Sciences, Gainesville, FL; Driller: M. Boatright; Cathead Operator: G. Davis

CORING METHOD AND EQUIPMENT : CME 550 S/N 186073, mud rotary, NQ tools, NW casing

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs on 5/31/2007

START : 5/31/2007

END : 6/1/2007

LOGGER : R. McComb

DEPTH BELOW SURFACE AND ELEVATION (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		RQD (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
-60.0	R5-NQ 5 ft 88%	37	10	99.35' - Fracture zone, 0-90 deg, rough, Undulating to stepped, open		Limestone 95.0-98.4' - variegated light olive brown to yellowish gray, (5Y 5/6 to 5Y 7/2), fine grained, mild to moderate HCl reaction, very weak to weak (R1 to R2), fossiliferous (mold/casts) with some organic fossiliferous particles at 95.4-95.7'; becoming interspaced with very fine grained limestone with depth, voids (up to 1/16") and cavities (up to 3/8"-3/4"x3/8") over 20-25% of surface Clay (CL) 98.4-98.45' - dark gray, (N3), strong HCl reaction, platy	R5:6 minutes
			4	100.0-100.3' - Fracture zone, 0-90 deg, smooth, open			
			4	100.7-100.9' - Fracture, 70 deg, rough, undulating, tight			
			1	101.2, 101.3' - Bedding plane (2), horizontal, smooth, undulating, open, black organic staining over 35%			
			10	101.8-102.5' - Fracture zone, 0-90 deg, rough, Stepped to undulating, open to tight			
			NR	102.65, 102.8, 102.98, 103.17' - Bedding plane (4), 0-<5 deg, rough, undulating, open			
105 -65.0	R6-NQ 5 ft 74%	33	4	104.1-104.4' - Fracture zone, 0-90 deg, open		Limestone 98.4-98.45' - dark gray, (N3), strong HCl reaction, platy Limestone 98.45-99.5' - very light gray, (N8), very fine grained, strong HCl reaction, weak (R2), some fossil voids and casts over 10% of surface No Recovery 99.5-100.0' Limestone 100.0-104.4' - yellowish gray, (5Y 8/1), fine to very fine grained, moderate to strong HCl reaction, very weak to weak (R1 to R2), trace fossils as molds and casts, voids 3/8"x3/4" over 10-15% of surface, cavities <2% less than 3/8"x3/8", chalk-like texture, becoming very soft, extremely weak (R0) at 104.0', thick, laminated from 101.2-101.3' with some black organic material No Recovery 104.4-105.0' Limestone 105.0-108.7' - yellowish gray, (5Y 8/1), very fine grained, strong HCl reaction, very weak to weak (R1 to R2), fossiliferous (molds and casts), transition from trace to 20% increasing with depth, void and cavities ranging from <5% to 15-20% with depth, some original fossil material (echinoids) at 108.4-108.7' No Recovery 108.7-110.0' Limestone 110.0-113.3' - yellowish gray, (5Y 8/1 to 5Y 7/2), very fine grained, strong HCl reaction, very weak to weak (R1 to R2), color transition at 112.2', voids (up to 1/16") over 5-10% of surface, fossiliferous casts/molds of original material (echinoids) suspended in matrix 113.3-114.9' - Same as 110.0-113.3' except cavities and voids more common covering 30-40% of surface, echinoids rare to absent No Recovery 114.9-115.0'	R6:6 minutes
			4	105.12' - Bedding plane, 0-<5 deg, smooth, Planar to stepped, open			
			4	105.3-105.95' - Fracture zone, 0-<5 deg, smooth, planar, open, fracture extending total length, extends from one side of contacts to the other side			
			1	105.95' - Bedding plane, horizontal, smooth, planar, tight to open			
			10	106.3' - Fracture, 30-40 deg, rough, stepped, tight			
			NR	106.5, 106.7, 106.95' - Bedding plane (3), horizontal, smooth, undulating, tight to open			
110 -70.0	R7-NQ 5 ft 98%	78	0	107.85' - Fracture, 0-90 deg, rough, stepped, tight		Limestone 108.2' - Bedding plane, <5 deg, rough, stepped, open	R7:7 minutes
			0				
			0				
			1				
			10	113.9' - Bedding plane, horizontal, rough, undulating, open			
			NR	113.9-114.1' - Fracture, vertical, rough, undulating, open			
115 -75.0	R8-NQ 5 ft 86%	74	2	114.1' - Bedding plane, 0-30 deg and 30 deg, rough, undulating, open		Limestone 114.5' - Bedding plane, horizontal, rough, planar, open 114.6-114.9' - Fracture zone, horizontal, rough, planar, limestone fragments, open 115.1' - Fracture zone, smooth, planar and undulating, limestone fragments 115.25, 117.55, 118.18, 118.53, 118.55, 119.3' - Bedding plane (6), smooth, undulating to planar, open	R8:8 minutes
			0				
			1				
			3				
			NR				
120	120.0						



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SHEET 7 OF 9

ROCK CORE LOG

PROJECT : Progress Energy Florida - COLA Investigation, Levy County Site LOCATION : 1723824.3 N, 457384.0 E (NAD83)

ELEVATION : 40.0 ft (NAVD88)

DRILLING CONTRACTOR : Universal Engineering Sciences, Gainesville, FL; Driller: M. Boatright; Cathead Operator: G. Davis

CORING METHOD AND EQUIPMENT : CME 550 S/N 186073, mud rotary, NQ tools, NW casing

ORIENTATION : Vertical

WATER LEVELS : 5.2 ft bgs on 5/31/2007

START : 5/31/2007

END : 6/1/2007

LOGGER : R. McComb

DEPTH BELOW SURFACE AND ELEVATION (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		RQD (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
-80.0	R9-NQ 5 ft 88%	24	4	120-120.35' - Fracture, vertical, smooth, planar		Limestone 115.0-119.3' - yellowish gray to very pale orange, (5Y 8/1 to 10YR 8/2), very fine grained, strong HCl reaction, very weak to weak (R1 to R2), "chalk-like" texture, zones where voids and cavities are nearly absent grades to zones/thin beds with voids up to 1/16" covering 20-30% (e.g. 116.1-116.2") cavities, <2% (more abundant near beginning of run, up to 3/8"x3/8"); fossil void to rate, becoming slightly more common at base of run No Recovery 119.3-120.0' Limestone 120.0-122.7' - Same as 115.0-119.3' 122.7-124.4' - Same as 120.0-122.7' except more voids/cavities up to 75-80% of surface covered with voids 1/16", cavities up to 3/8"-3/4"x3/8"-3/4", fossiliferous (molds/casts) No Recovery 124.4-125.0' Limestone 125.0-129.3' - Same as 122.7-124.4' except some thin laminations at base of interval 129.3-129.5' - yellowish gray, (5Y 7/2), fine grained, strong HCl reaction, medium strong (R3), laminated bedding, thick, laminae incline 10-15 deg, 1 cavity 3/8"x3-7/8", voids less than 1/16" over 10-15% of surface, dense limestone No Recovery 129.5-130.0' Limestone 130.0-133.5' - yellowish gray, (5Y 8/1), strong HCl reaction, weak to very weak (R2 to R1), voids up to 1/16" or less over 5-10% of surface, rare cavities (3/16"x3/16"), trace fossil molds/casts; thin lamination in upper 0.1-0.2' of section No Recovery 133.5-135.0' Limestone 135.0-139.5' - Same as 130.0-133.5' except cavities and voids more frequent becoming fine to medium grained at 166.67' with some fossils, cavities becoming common with depth up to 3/8"-3/4"x3/8", some mottling (coating of limestone matrix) becoming extremely weak rock (R0) at 138.4' to 139.0', thick laminated from 138.0-139.5', few voids No Recovery 139.5-140.0'	R9:5 minutes
			2	120.35' - Fracture, 40 deg, rough, undulating, tight			
			7	120.55' - Fracture, 0-60 deg, smooth, planar, open			
			8	120.75' - Bedding plane, horizontal, undulating, open			
			4	121.35' - Bedding plane, horizontal, smooth, stepped, tight			
			NR	121.97, 122.25, 122.37, 122.7, 122.77, 122.87, 123.0, 123.15, 123.4, 123.5, 123.55, 123.63, 123.7, 123.82, 123.88, 123.9, 140.1, 140.2, 140.3, 140.45' - Bedding plane (20), horizontal, rough, undulating to stepped, open			
125 -85.0	R10-NQ 5 ft 90%	25	6	125.3, 125.47, 125.57, 125.67, 125.82, 125.96, 126.05, 126.12, 126.27, 126.32, 126.51, 126.65, 126.72, 126.90, 127.15, 127.25, 127.35, 127.48, 127.7, 127.78, 127.92, 128.0, 128.07' - Bedding plane or mechanical break (23), horizontal, rough, undulating to stepped, open			R10:7 minutes
			8				
			8				
			1				
			2				
			NR				
130 -90.0	R11-NQ 5 ft 70%	8	3	129.3' - Bedding plane, 10-15 deg, smooth, planar, tight			R11:7 minutes
			7	129.48' - Bedding plane, <5 deg, smooth, stepped, open			
			7	130.25, 130.58, 130.9, 131.2, 131.28, 131.5, 131.55, 131.64, 131.78, 131.97, 132.13, 132.35, 132.42, 132.47, 132.68, 132.92, 132.97, 133.05' - Bedding plane (18), horizontal, smooth, undulating to planar, open			
			7				
			2				
			NR				
135 -95.0	R12-NQ 5 ft 90%	0	5	135.1, 135.2' - Bedding plane (2), horizontal, smooth, undulating, open			R12:7 minutes
			7	135.3' - Bedding plane or fracture, 0-60 deg, rough, stepped to undulating, open			
			5	135.5-136.65' - Fracture zone, 0-90 deg, smooth, undulating, gravel			
			>10	136.72, 136.82, 136.92, 137.05, 137.27, 137.5' - Bedding plane (6), horizontal, rough, undulating, open			
			2	137.6' - Bedding plane or fracture, 0-50 deg, smooth, undulating, open			
			NR	138.04, 138.25, 138.4' - Bedding plane (3), horizontal, rough, undulating, open			
140				138.4-139.0' - Fracture zone, 0-90 deg, smooth to rough, undulating to stepped, open			



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SHEET 8 OF 9

ROCK CORE LOG

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ELEVATION : 40.0 ft (NAVD88)

DRILLING CONTRACTOR : Universal Engineering Sciences, Gainesville, FL; Driller: M. Boatright; Cathead Operator: G. Davis

CORING METHOD AND EQUIPMENT : CME 550 S/N 186073, mud rotary, NQ tools, NW casing

ORIENTATION : Vertical

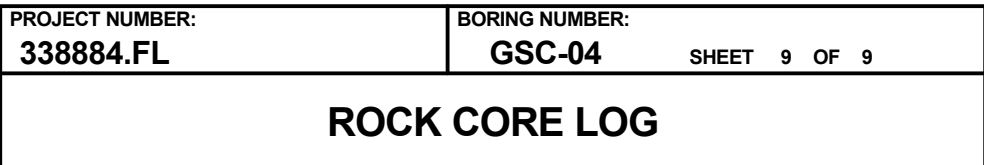
WATER LEVELS : 5.2 ft bgs on 5/31/2007

START : 5/31/2007

END : 6/1/2007

LOGGER : R. McComb

DEPTH BELOW SURFACE AND ELEVATION (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		RQD (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
-100.0	R13-NQ 5 ft 84%	10	5	139.25' - Bedding plane, horizontal, rough, stepped to undulating, open		Limestone 140.0-144.2' - variegated yellowish gray with gray laminae, (5Y 8/1 to 5Y 9/2), very fine to fine grained, strong HCl reaction, weak to very weak (R2 to R1), voids and cavities, 3-5% becoming 10-15% with depth, fossiliferous with trace echinoids in top portion, molds and casts increase with depth (5-10%), thick laminated 133.9-134.0'	R13:6 minutes
			6	140.3, 140.42, 140.6, 140.75, 140.95' - Bedding plane or mechanical break (5), horizontal, smooth, planar to undulating			
			6	141.18, 141.28, 141.33, 141.39, 141.5, 141.8' - Bedding plane or mechanical break (6), horizontal, smooth, planar to undulating			
			6	142.0, 142.08, 142.18, 142.46, 142.75, 142.9' - Bedding plane or mechanical break (6), horizontal, smooth, planar to undulating			
			2	143.05, 143.13, 143.65, 143.88, 143.95, 143.98' - Bedding plane or mechanical break (6), horizontal, rough, planar to undulating			
145	R14-NQ 5 ft 84%	10	NR	144.08, 144.18' - Bedding plane or mechanical break (2), horizontal, rough, planar to undulating		No Recovery 144.2-145.0' Limestone 145.0-147.1' - light gray to medium gray, (N7 to N6), very fine grained, strong HCl reaction, medium strong (R3), fossiliferous (molds and casts) over 3-5%, voids up to 1/16" over 3-5% of surface 147.1-149.2' - yellowish gray grading to medium gray with depth, (5Y 7/2 to N5), fine grained, mild to moderate HCl reaction, thinly laminated in upper 0.5', trace fossil molds/casts, 1 cavity 3/8"x2", voids up to 1/16" over 15-20% of surface, some dissolution features (cavities) at 148.2' as discontinuous bedding plane voids No Recovery 149.2-150.0'	R14:6 minutes
-105.0			>10	145.0-147.25' - Fracture zone, 0-90 deg, limestone gravel, stepped, undulating, smooth to rough, open			
			>10				
			10	147.25' - Bedding plane, horizontal, rough, undulating, open			
			7	147.3, 147.45, 147.52, 147.92, 148.0, 148.05, 148.24, 148.65' - Bedding plane (8), 0-5 deg, undulating to planar, rough to smooth, some organic black coating over 70-80% of surfaces			
150	R15-NQ 5 ft 100%	90	1	148.65-148.90' - Fracture zone		Limestone 150.0-150.9' - yellowish gray to dusky yellow, (5Y 7/2 to 5Y 6/4), fine grained, moderate to mild HCl reaction, medium strong (R3), becomes thinly laminated with depth, voids up to 1/16" over 30-40% of surface with trace thin laminae of very fine limestone with few voids 150.9-151.8' - variegated yellowish gray, dusky yellow to light olive brown, (5Y 7/2, 5Y 6/4 to 5Y 5/6), coarse grained, strong HCl reaction, weak (R2), abundant possible lithoclasts (possible conglomeratic) Limestone 151.8-153.3' - dusky yellow to yellowish gray, (5Y 6/4 to 5Y 7/2), medium grained, weak (R2) 153.3-155.0' - Same as 150.0-150.9' except thinly laminated, voids up to 1/16" over 5-10%, mild to strong HCl reaction with depth, some early fracture development/dissolution at 154.7'	R15:6 minutes
-110.0			0	150.9' - Bedding plane, horizontal, rough, undulating			
			1	152.55' - Bedding plane, horizontal, rough, undulating, tight			
			14	153.25-153.4' - Fracture zone, 0-90 deg, rough			
			1	153.5' - Bedding plane or fracture, horizontal, rough, planar, open			
155	R16-NQ 5 ft 98%	76	0	153.5-153.85' - Fracture, 80-90 deg, rough, undulating, tight			R16:8 minutes
-115.0			1				
			7	156.4, 157.15, 157.25, 157.33, 157.52, 157.65, 157.73, 157.96' - Bedding plane (8), 0-5 deg, rough, undulating, open to tight			
			3	158.0, 158.15, 158.22' - Bedding plane (3), horizontal, smooth, undulating, open			
			2	159.1' - Bedding plane, 0-5 deg, rough, undulating, open			
160			NR	159.5' - Fracture, 50 deg, rough, stepped, tight			Actual Not Recovered interval from 159.9-160.0'



CORING METHOD AND EQUIPMENT : CME 550 S/N 186073, mud rotary, NQ tools, NW casing

WATER LEVELS : 5.2 ft bgs on 5/31/2007 START : 5/31/2007 END : 6/1/2007 LOGGER : R. McComb

WATER LEVEL: 152.4 bgs on 6/1/2007		START: 150.7/2007		END: 150.7/2007		LOGGERS: R. HOGGINS	
DEPTH BELOW SURFACE AND ELEVATION (ft)	CORE RUN, LENGTH, AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION		ROCK TYPE, COLOR, MINERALOGY, TEXTURE, WEATHERING, HARDNESS, AND ROCK MASS CHARACTERISTICS	SIZE AND DEPTH OF CASING, FLUID LOSS, CORING RATE AND SMOOTHNESS, CAVING ROD DROPS, TEST RESULTS, ETC.
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
						Limestone 155.0-157.25' - variegated yellowish gray to light gray brownish gray, (5Y 7/2 to N7), fine grained, mild to moderate HCl reaction, medium strong to weak (R3 to R2), competent, becoming thinly laminated with depth, fossil casts and molds over 5-10%, voids 10-15%, cavities 1/16"x3/16" showing alteration coloring, transitioned to lithology below, becoming light olive brown in color 157.25-158.2' - variegated yellowish gray to light olive brown to moderate brown, (5Y 7/2 to 5Y 5/2 to 5Y 4/4), fine to medium grained, mild to moderate HCl reaction, weak (R2), competent, very thinly laminated with possibly organic material, trace fossils, some voids and cavities over 10-15% of surface 158.2-159.1' - yellowish gray, (5Y 7/2), some medium gray (n7-n8) mottling, fine grained, mild HCl reaction, weak to medium strong (R2 to R3), competent, voids up to 1/16" over 2-3%, several cavities 3/16"x3/8" over <1%, fossiliferous (<1%), casts/molds (echinoids) 159.1-159.9' - yellowish gray to light olive brown, (5Y 7/1 to 5Y 8/1), fine to medium grained, moderate to strong HCl reaction, weak (R2), fossiliferous, voids/cavities over 10-15% of surface No Recovery 159.9-160.0' Bottom of Boring at 160.0 ft bgs on 6/1/2007	